Giant Sudoku

16×16 Sudoku · *Pure logic*

16×16 grids generated through human reasoning · detailed hints included

ORIGIN

In 2008, out of curiosity and for the challenge, I started writing a Sudoku generator that could reason like a human solver, not like a machine.

It was never meant to become a book. It was simply a problem that interested me.

Eighteen years later, I brought the code back, rebuilt the algorithm, and this volume is the result.

The techniques used in this volume are documented online. A simple search for the name of the technique is enough to find detailed explanations and illustrated examples.

WHAT MAKES THESE GRIDS DIFFERENT

Most generators build a valid grid first and rate its difficulty afterward. This one works the other way around.

Each value is removed only if the cell can still be recovered through human logical reasoning. Naked Single, Hidden Single, Naked Pair, X-Wing, Swordfish, Skyscraper... every removal is justified by a real solving technique.

WHAT YOU WILL NOT FIND ELSEWHERE

Each grid comes with detailed clues: not only the techniques required to solve it, but also the exact coordinates of the cells involved. Progressive guidance that helps without giving away the answer.

I have not found another book that offers that. Maybe you have not either.

GUARANTEES

The result: every grid can be solved without guessing. Every deduction is logical and traceable.

My algorithm computes a complete logical solving path for every grid. If you find another one, that is often a sign of real expertise.

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Puzzles

No. 1

Moyen

		1			12				7		13	15		4	3
	14								16	6		12	11	8	
11	8		10				2	15			5		9	16	
3	15	5	4		9	1	6	12							7
		2					4	9	1		6		10	12	8
	1	9	16		11	12	10		14			5			
10				14	2		7				3		6		
	5		15	1		9				8	10	2	7	13	
	3				16		1		11	12		7		2	13
14		7	13	5		3			9		16		8		12
8	11	10		13	7		14			15		6			
	9		1		10	11		2	13	14			4		
12			11		14				3	5		16			9
		16	9	11		10		7		13	14		15	3	5
13			2	3	15			16	6	9		8		10	
5		15		6	1				10	11		14	13		

128 empty cells · Score 0 · Hints & solution p. 25

No. 2

Moyen

6		16		2	14				11	13	10	5			4
10	13	9			6	3	16		5				14	2	
		12	2	8		4			1			11		10	
			8		13	9		12			14		3		16
	1	6	3	15	12		14		13	11	9		5	4	
	2		15			8	7		3		16		11		10
5				9	11		13	14	15	2					
9						1	6	8			4	14			
	10			16		6	3	7	4	8			2		14
8		4						15	12	14			6	1	3
		15	12	5		7		3			1	9		11	
1					2		15						8	5	
13		11	10		3					4				14	12
	16		6			12			10	9	13	8		7	
4	5	8		13	9			2		12			16	3	1
15		2		7	4		8	1	6	16			9		

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No. 3

Moyen

12		9	13			8				16	6	3	1		
14				15			12		5	10		6	7	11	
1	3		10		7				12			4			14
		16	11		5	10		4			2	15		13	9
11							10			2	8				15
	8		14	9			13	5	3				11	7	
10	5	3	1		11	6		12			9	14		2	4
	9			14	4	2	8	7		6	16			1	
	7		6	1					8				9		
		10			16		7		9	13	12	2		4	8
9		13	15	2		4	14	6						3	10
		4			13	15		1		3	5		16		11
			5	16	6	7	11		15		13			14	2
15		12				14	4				11		3	5	
6		7	16		1	5			2	14		13		9	
2	4				12				1		3			16	7

128 empty cells · Score 0 · Hints & solution p. 26

No. 4

Moyen

	12		11		8	13				2	15	16	9		4
3	4		9			7	11	10						2	5
	6	2		9			16		12	14					10
8			1				15		4			7	11	14	
16	3	9	4	14						1	10		5		2
	5			4	3				14		11		10	13	
	14	11	12		13				2		6	9		16	
13				5		15	6			16	9		12	7	14
9		4	3	7	11		14	13	1					6	15
1	13		8	2	15		5			9		12	14		
15	2	6				9			7		12			1	13
						10	8			6	5		3		
	11	14	7	1	10	8		15		5				4	
		3	16				7			8	13	2			6
6	15		2	16		4		7	11				13	10	1
	1					5		16		4	3			12	

128 empty cells · Score 0 · Hints & solution p. 26

No. 5

Moyen

		10		5	2	3	1	7	15			11	6	13	
2					13	6	9	14	8	4					15
13		9	11		7		15		2		1	4	10	14	
	16	12		14						11			3		
6						7				2		8		10	4
4		14		1	3	2	5		16	15		9			
	15	7	12			8	14	6	11	9		1	2		5
			1				11	10		8			7		16
	14	4				5	3		12		16		11		6
		3	2		9	11	6	8			4		16	15	12
9		6		7	15						3	14			
		16			10			9		13	11	2	5	1	
5	1	2		6		9			14	10			15	16	
7				4			8			6	9	3		5	
	9			12	16					1	2	10	8		
14	10		4			1			7	12				11	13

128 empty cells · Score 0 · Hints & solution p. 27

No. 6

Hard

			16				4	14			2		15		
	8				1		15		5	9	3			12	10
11		15				3					12		14	2	
	10	7		6		8		1					16		9
			10	14	8							16	3		5
		1	13	5					7	4					6
14		2		15							9		12	10	
	9				12		7				8				11
	15			16			3	10				2		6	
		3	9		10	4				14	6		13	11	
12					6			11	13	1	15			5	
2				1	11				3					4	7
		6	14	13		1		5				10			12
		4			14	2			11	13				16	
	1				5		9	4				8			
3						7	10		8	2		13	11		1

154 empty cells · Score 418 · Hints & solution p. 27

No. 7

Hard

		12	1		5	3				16			7		10
		14	16		11					7				4	13
9	10	7			15	8		5		4			2		
5				6		10		2			11	15	14		8
		6				15		4	3	13		2	12		11
12				3			13				14				9
	5	13		10	7	9									
	15			1			12	7	10				4		3
	13		4				9		12		1		15	14	
10	6			14								1			
11	1			4		13	5	15			8	10		7	
8							11			9	6		3	5	
			9		16	14		13	5			12	1		
			2						14			6		9	
	4					7	10			11		16		15	
16		8	15		12	2		6							5

152 empty cells · Score 743 · Hints & solution p. 28

No. 8

Hard

		15	4	16			9	13							
		16				8	6		3		10			15	
10	3			2			5						8	13	
	14			3		12				4	5	9		11	7
		9		6			13	3	10	12		4	5		
4	5			9		16		8							1
		14				3				15				16	
1	10				15					11	7		14		
16			9		14				1				4		2
12		10		4			15	9	7	16		13		14	
8	13						12	5			15	11			
		5	2				11		6		13		10	3	
						4				9	16		13	6	
2	15									14		12			3
	8		6		10	1	3		15		2			7	9
		11	7	8				1	12			2			5

153 empty cells · Score 849 · Hints & solution p. 28

No. 9

Hard

3		1		14			16		9		15	4		8	
		6			4	5				16	10		12	11	
	8		13				7	1	3			10			
	16				11		12		5					7	6
	14			1	12			8					6		
	7	15	9		8	4				14					1
4			5			15	9	11		3	12	16	2		
		11				10			6					13	
15							5		10		14	12			
	3		1				2	7			9	13	4		
16			10					13		4		9			7
8			4	15				12		1		14			16
12		3		16	2		10	9		15		5			
13				7				3							14
	6								16				11		
14		2				3			13	8	4	6	7	15	

155 empty cells · Score 851 · Hints & solution p. 29

No. 10

Hard

		6		12		10			15		13			7	
9								2			4	5		8	
11			7	8	5				14			9			
						4		12		9		14	3		
13			15			2	7	9	16	10		6	1		
10	12		9			6	3			11		15			13
		3		9	10			5			8				
4	7					13				14					
	15	5		4			11	10				3	14		1
	14		6		16	12					5		11	4	7
16	9	12			6	3	1		2						
2	11			15		8					1			10	
	10						14	4	7	2				13	5
		11			8		15	6	1		14	12			9
1				16	12				5	8	15		4	2	
			8	2		11	4							3	

151 empty cells · Score 1046 · Hints & solution p. 29

No. 11

Expert

12		11				1	16		15		13		2		9
1			14	6						2	5				
	6		13		5			4	12			7			
		2		10	4		11	1						15	
10	12			1						8	15	3			
	3	9							14			15	8		
			16			6	13		5			12	4	10	11
6	8			9		2	5	11	10			1			16
			3				10	16		14				6	15
16			1				6				9			11	
11	4	10								13		9			
15				5				12					7		
	16		7	15		13			9	3			12		
13	15	8					9				11	16		14	
4			10		7	14					6		3		5
	2			11			12	14	1	16		6		8	

154 empty cells · Score 847 · Hints & solution p. 30

No. 12

Expert

2				7		9			14	8	12		15	1	
			16	3		6	4	1				11			8
		11			15		1		16	9	13			3	4
5	10											7			9
8			12				5	16				6	4	2	3
	1			14			11	2		4			9	7	
	13	7					3		15		1				12
6	3			16	9	13		14					10		
	2		3		13			8		11		10	1		
		15		8	12			6			2			16	
	14			10		5	15			7			3		
9		16	13	6		3			10		5			14	11
11	8	12				15					9				
		4			7				11			1			15
			5	12					3						16
		9				2		10	1					8	14

153 empty cells · Score 970 · Hints & solution p. 30

No. 13

Expert

		9	12									11			7
11							12			6	15	8	4		16
10				8		4			14						9
			5	7	14			12	13	2					
			4			7		2	9					10	6
9				1	10			5	8					14	3
	11	3			13			6	15			16	8	4	
		1		16			5			14	7		13		
14			7		12		9			1	10		5		
			15						3			2			
		13			1	6	15				4		3		11
4	5				3			9		12	13	10			
	16						11					6	1	15	
	15	6			8		4	14	7		3	12		13	2
12	9				15		10	4	16		5			11	
	7	14	11	2		12			1					8	

153 empty cells · Score 1283 · Hints & solution p. 31

No. 14

Expert

15				2					13			10			16
	7	2					5	3		16					
		1	4				10						8		7
	10		12		15	14			2		9				
					3	10		11	15			9	7		
6	14			9			8			1	13			10	
	8			4	13				12			14	15	11	
3	12	16					14	7				4	5		
	5				12	3	16	6							9
		11	6	7		2				4				3	12
8			2	5	1				16			15			
		10		11	14					9	8		13	1	
	3						6				7				13
13			5	12		16			14	6				7	2
11			15	8			2	4	1						
			9		5	4		12		10		6	14		

157 empty cells · Score 1296 · Hints & solution p. 31

No. 15

Expert

13		9		7	2				11		1			10	16
	16	3	8		13	15		7			6	5			
							5			16		14		9	13
1			4	8	10			14		15		7			
11		1								14			7		
	14			6		7			4	5	11	10		16	
2	12			5	11	4		3			10		14		15
				9	15		13		12					11	4
	3		10			9		2					1		
12	7				4				8			13	9		14
				2		6						16			
	5	11	1			3								12	
9						2	7				5			3	
	6	12		11	5				3	10		15			
	10	8	16			13					7	4			1
			11		3	10		15	9		14		2	7	6

153 empty cells · Score 1622 · Hints & solution p. 32

No. 16

Extreme

9			16				14			6				8	
			15		9			11		8					3
		3		2			11	14		12			13		7
4							1		16			10			
		16	13	12	15		10	3	6				4		8
						13	9				2			6	
2		8						7		9	16	15		14	
	1					11	4		12	14		7			
	2		4		6		5		9		13				14
			1	11	8			15			12		7	9	
16	7		9		12	10			1				2		11
15	10		14				7					5	3	1	
11				3		5			7	16			12		10
6			3					12				13	16		
12		14			13			8	4	2		6	5		1
				10	14	15				5	1			2	

153 empty cells · Score 1890 · Hints & solution p. 32

No. 17

Extreme

	16	11	8		6	12			2						13
9	5						8		3	4	13		14		7
		12	7	3		10				16				15	
			13				9				6		11		1
			14		10	4			1						2
10				9	15		2		6	7		8			11
11				7		6		5		15		10			3
		9		8		1		4	13		3	12			
	2	15		11					10		4			7	6
3		13			2		5		7						
16			1	12	14				15			3	10		
14					3		4	1						9	5
15	9	5				16	11			13					
		16								9			4		
		3	10	5				12				1	16		
		14	12					11			8		5	2	15

156 empty cells · Score 2134 · Hints & solution p. 33

No. 18

Extreme

16			11					9	4	7					
5				8	12			10	14			9			
				10		3	14			13	1		11		
	3		2	4	6			8					13		1
	8			13		15			6			14	3	2	
			10		4	7		12	16				5		15
		1				11				10					4
7		6	9	2			3				15			12	8
14				7			6			16					5
		11	12	15	1							10	2		
4	9		6	14					13			8			
			1		16		12	14	2	3			6	7	
		16					5	6			7		10	3	
	13	5					8				2			9	
6			4		14	2				15	13			16	
		10		9				16		11	12	1	15		

156 empty cells · Score 2406 · Hints & solution p. 33

No. 19

Extreme

	14		2		3			6		13		1			
	6	12					14			8		16	11		
7		1		12						4	16	14	2	15	9
11	3			1		8	10	9							
	9		15	16	11		3		13	12					7
4	11	3			8			2		14			12		13
8									4		3	9			
	5	6				15			8		10			16	11
1	8					6							14		
		5		9				8		10	7			3	
											2		6	5	12
15			14			16	11	13	12				1	10	
3	16	4					1				15		5		
		13	5	2	14			1	10			4			
	15	2	9			3						8		7	
			7	13	6	5		16		11			9		14

153 empty cells · Score 2752 · Hints & solution p. 34

No. 20

Extreme

15					2		14					11	7	1	
14		9		3						6			10		15
	6	1				10		2	16					4	12
				1		7			13		10			2	
	10					14		8	4				11		1
	3			7			6		15	5		14			
2		16	14		3	12				1	11			10	5
		7					15	9			16		8		4
	12	4	3			1						9		14	16
		2	9				8	6							
13							16	4	8	12		7	1	6	
	11			15		5	10				2			12	
10	13		5			2			3		4				
1			6				5	16		9				8	3
3			4	11							15				9
	16	14			8	4			1	7		5	15		

154 empty cells · Score 3206 · Hints & solution p. 34

Solutions

Coordinates are read (column, row).

No. 1

Moyen

9	16	1	6	10	12	8	11	14	7	2	13	15	5	4	3
2	14	13	7	4	5	15	3	1	16	6	9	12	11	8	10
11	8	12	10	7	13	14	2	15	4	3	5	1	9	16	6
3	15	5	4	16	9	1	6	12	8	10	11	13	2	14	7
7	13	2	14	15	3	5	4	9	1	16	6	11	10	12	8
6	1	9	16	8	11	12	10	13	14	7	2	5	3	15	4
10	12	11	8	14	2	13	7	5	15	4	3	9	6	1	16
4	5	3	15	1	6	9	16	11	12	8	10	2	7	13	14
15	3	4	5	9	16	6	1	10	11	12	8	7	14	2	13
14	2	7	13	5	4	3	15	6	9	1	16	10	8	11	12
8	11	10	12	13	7	2	14	3	5	15	4	6	16	9	1
16	9	6	1	12	10	11	8	2	13	14	7	3	4	5	15
12	10	8	11	2	14	7	13	4	3	5	15	16	1	6	9
1	6	16	9	11	8	10	12	7	2	13	14	4	15	3	5
13	7	14	2	3	15	4	5	16	6	9	1	8	12	10	11
5	4	15	3	6	1	16	9	8	10	11	12	14	13	7	2

SCORE

0

Also solved with : 128 × Naked Single

No. 2

Moyen

6	3	16	1	2	14	15	12	9	11	13	10	5	7	8	4
10	13	9	11	1	6	3	16	4	5	7	8	12	14	2	15
14	15	12	2	8	7	4	5	16	1	3	6	11	13	10	9
7	4	5	8	10	13	9	11	12	2	15	14	1	3	6	16
16	1	6	3	15	12	2	14	10	13	11	9	7	5	4	8
12	2	14	15	4	5	8	7	6	3	1	16	13	11	9	10
5	8	7	4	9	11	10	13	14	15	2	12	3	1	16	6
9	11	10	13	3	16	1	6	8	7	5	4	14	12	15	2
11	10	13	9	16	1	6	3	7	4	8	5	15	2	12	14
8	7	4	5	11	10	13	9	15	12	14	2	16	6	1	3
2	14	15	12	5	8	7	4	3	16	6	1	9	10	11	13
1	6	3	16	12	2	14	15	13	9	10	11	4	8	5	7
13	9	11	10	6	3	16	1	5	8	4	7	2	15	14	12
3	16	1	6	14	15	12	2	11	10	9	13	8	4	7	5
4	5	8	7	13	9	11	10	2	14	12	15	6	16	3	1
15	12	2	14	7	4	5	8	1	6	16	3	10	9	13	11

SCORE

0

Also solved with : 128 × Naked Single

No. 3

Moyen

12	15	9	13	4	14	8	2	11	7	16	6	3	1	10	5
14	2	8	4	15	9	13	12	3	5	10	1	6	7	11	16
1	3	5	10	11	7	16	6	13	12	9	15	4	2	8	14
7	6	16	11	3	5	10	1	4	14	8	2	15	12	13	9
11	16	6	7	5	3	1	10	14	4	2	8	9	13	12	15
4	8	2	14	9	15	12	13	5	3	1	10	16	11	7	6
10	5	3	1	7	11	6	16	12	13	15	9	14	8	2	4
13	9	15	12	14	4	2	8	7	11	6	16	5	10	1	3
16	7	11	6	1	10	3	5	2	8	4	14	12	9	15	13
5	1	10	3	6	16	11	7	15	9	13	12	2	14	4	8
9	12	13	15	2	8	4	14	6	16	11	7	1	5	3	10
8	14	4	2	12	13	15	9	1	10	3	5	7	16	6	11
3	10	1	5	16	6	7	11	9	15	12	13	8	4	14	2
15	13	12	9	8	2	14	4	16	6	7	11	10	3	5	1
6	11	7	16	10	1	5	3	8	2	14	4	13	15	9	12
2	4	14	8	13	12	9	15	10	1	5	3	11	6	16	7

SCORE

0

Also solved with : 128 × Naked Single

No. 4

Moyen

14	12	7	11	10	8	13	1	6	5	2	15	16	9	3	4
3	4	16	9	12	14	7	11	10	8	13	1	15	6	2	5
5	6	2	15	9	4	3	16	11	12	14	7	13	1	8	10
8	10	13	1	6	5	2	15	9	4	3	16	7	11	14	12
16	3	9	4	14	7	11	12	8	13	1	10	6	5	15	2
2	5	15	6	4	3	16	9	12	14	7	11	1	10	13	8
7	14	11	12	8	13	1	10	5	2	15	6	9	4	16	3
13	8	1	10	5	2	15	6	4	3	16	9	11	12	7	14
9	16	4	3	7	11	12	14	13	1	10	8	5	2	6	15
1	13	10	8	2	15	6	5	3	16	9	4	12	14	11	7
15	2	6	5	3	16	9	4	14	7	11	12	10	8	1	13
11	7	12	14	13	1	10	8	2	15	6	5	4	3	9	16
12	11	14	7	1	10	8	13	15	6	5	2	3	16	4	9
4	9	3	16	11	12	14	7	1	10	8	13	2	15	5	6
6	15	5	2	16	9	4	3	7	11	12	14	8	13	10	1
10	1	8	13	15	6	5	2	16	9	4	3	14	7	12	11

SCORE

0

Also solved with : 128 × Naked Single

No. 5

Moyen

8	4	10	14	5	2	3	1	7	15	16	12	11	6	13	9
2	3	1	5	11	13	6	9	14	8	4	10	16	12	7	15
13	6	9	11	16	7	12	15	5	2	3	1	4	10	14	8
15	16	12	7	14	8	4	10	13	9	11	6	5	3	2	1
6	13	11	9	15	12	7	16	1	3	2	5	8	14	10	4
4	8	14	10	1	3	2	5	12	16	15	7	9	13	6	11
16	15	7	12	10	4	8	14	6	11	9	13	1	2	3	5
3	2	5	1	9	6	13	11	10	4	8	14	15	7	12	16
10	14	4	8	2	1	5	3	15	12	7	16	13	11	9	6
1	5	3	2	13	9	11	6	8	10	14	4	7	16	15	12
9	11	6	13	7	15	16	12	2	1	5	3	14	4	8	10
12	7	16	15	8	10	14	4	9	6	13	11	2	5	1	3
5	1	2	3	6	11	9	13	4	14	10	8	12	15	16	7
7	12	15	16	4	14	10	8	11	13	6	9	3	1	5	2
11	9	13	6	12	16	15	7	3	5	1	2	10	8	4	14
14	10	8	4	3	5	1	2	16	7	12	15	6	9	11	13

SCORE

0

Also solved with : 128 × Naked Single

No. 6

Hard

9	3	5	16	10	7	12	4	14	6	8	2	11	15	1	13
6	8	14	2	11	1	13	15	16	5	9	3	4	7	12	10
11	13	15	1	9	16	3	5	7	4	10	12	6	14	2	8
4	10	7	12	6	2	8	14	1	15	11	13	5	16	3	9
7	4	12	10	14	8	6	2	13	1	15	11	16	3	9	5
15	11	1	13	5	3	9	16	12	7	4	10	14	2	8	6
14	6	2	8	15	13	11	1	3	16	5	9	7	12	10	4
5	9	16	3	4	12	10	7	2	14	6	8	15	1	13	11
1	15	13	11	16	9	5	3	10	12	7	4	2	8	6	14
16	5	3	9	7	10	4	12	8	2	14	6	1	13	11	15
12	7	10	4	2	6	14	8	11	13	1	15	3	9	5	16
2	14	8	6	1	11	15	13	9	3	16	5	12	10	4	7
8	2	6	14	13	15	1	11	5	9	3	16	10	4	7	12
10	12	4	7	8	14	2	6	15	11	13	1	9	5	16	3
13	1	11	15	3	5	16	9	4	10	12	7	8	6	14	2
3	16	9	5	12	4	7	10	6	8	2	14	13	11	15	1

SCORE

418

Hidden Single 27 targets

Targets (27) (8,4) (3,2) (4,4) (6,4) (4,2) (12,14) (1,14) (9,16) (2,13) (8,13) (1,13) (1,1) (3,16) (14,14) (16,15) (2,1) (4,3) (4,7) (4,8) (4,12) (7,12) (14,13) (2,12) (7,11) (2,3) (9,6) (6,6)

Naked Triple 3 targets

Targets (3) (16,9) (16,10) (16,11)

Also solved with : 121 × Naked Single

No. 7

Hard

2	11	12	1	13	5	3	4	14	8	16	15	9	7	6	10
15	8	14	16	12	11	1	2	9	6	7	10	3	5	4	13
9	10	7	6	16	15	8	14	5	13	4	3	11	2	12	1
5	3	4	13	6	9	10	7	2	1	12	11	15	14	16	8
7	9	6	10	8	14	15	16	4	3	13	5	2	12	1	11
12	2	1	11	3	4	5	13	16	15	8	14	7	6	10	9
4	5	13	3	10	7	9	6	12	11	1	2	14	16	8	15
14	15	16	8	1	2	11	12	7	10	6	9	5	4	13	3
3	13	5	4	7	10	6	9	11	12	2	1	8	15	14	16
10	6	9	7	14	8	16	15	3	4	5	13	1	11	2	12
11	1	2	12	4	3	13	5	15	16	14	8	10	9	7	6
8	16	15	14	2	1	12	11	10	7	9	6	13	3	5	4
6	7	10	9	15	16	14	8	13	5	3	4	12	1	11	2
1	12	11	2	5	13	4	3	8	14	15	16	6	10	9	7
13	4	3	5	9	6	7	10	1	2	11	12	16	8	15	14
16	14	8	15	11	12	2	1	6	9	10	7	4	13	3	5

SCORE

743

Hidden Single 39 targets

Targets (39) (8,1) (9,1) (8,3) (8,4) (15,4) (5,3) (11,4) (1,7) (4,7) (2,5) (12,8) (11,11) (2,14) (16,7) (13,7) (2,16) (4,12) (16,15) (16,3) (15,3) (5,1) (1,2) (10,6) (13,6) (1,8) (3,8) (2,12) (12,2) (6,9) (2,13) (16,10) (16,11) (16,9) (3,10) (8,10) (10,11) (3,12) (16,14) (13,2)

Naked Pair 5 targets

Targets (5) (9,2) (9,6) (9,7) (9,14) (9,15)

Naked Triple 7 targets

Targets (7) (4,5) (6,5) (15,5) (7,6) (7,8) (7,9) (7,14)

Also solved with : 93 × Naked Single

No. 8

Hard

5	2	15	4	16	7	11	9	13	8	6	14	3	12	1	10
7	9	16	11	14	13	8	6	12	3	1	10	5	2	15	4
10	3	12	1	2	4	15	5	11	16	7	9	14	8	13	6
6	14	8	13	3	1	12	10	15	2	4	5	9	16	11	7
11	7	9	16	6	8	14	13	3	10	12	1	4	5	2	15
4	5	2	15	9	11	16	7	8	14	13	6	10	3	12	1
13	6	14	8	10	12	3	1	2	5	15	4	7	9	16	11
1	10	3	12	5	15	2	4	16	9	11	7	6	14	8	13
16	11	7	9	13	14	6	8	10	1	3	12	15	4	5	2
12	1	10	3	4	2	5	15	9	7	16	11	13	6	14	8
8	13	6	14	1	3	10	12	5	4	2	15	11	7	9	16
15	4	5	2	7	16	9	11	14	6	8	13	1	10	3	12
3	12	1	10	15	5	4	2	7	11	9	16	8	13	6	14
2	15	4	5	11	9	7	16	6	13	14	8	12	1	10	3
14	8	13	6	12	10	1	3	4	15	5	2	16	11	7	9
9	16	11	7	8	6	13	14	1	12	10	3	2	15	4	5

SCORE

849

Hidden Single 33 targets

Targets (33) (8,4) (9,4) (7,3) (13,9) (1,12) (9,12) (4,11) (2,12) (10,11) (16,12) (14,16) (4,6) (16,5) (5,13) (8,7) (12,5) (7,5) (8,8) (8,9) (16,10) (11,15) (5,2) (6,3) (5,7) (11,11) (7,11) (6,14) (11,6) (10,14) (1,13) (5,15) (1,1) (10,1)

Naked Pair 11 targets

Targets (11) (5,9) (5,14) (6,10) (6,11) (6,12) (7,9) (7,12) (7,14) (4,13) (6,13) (13,13)

Naked Triple 5 targets

Targets (5) (9,2) (9,3) (12,1) (12,3) (1,16)

Also solved with : 92 × Naked Single

No. 9

Hard

3	11	1	12	14	10	2	16	6	9	7	15	4	13	8	5
9	15	6	7	13	4	5	8	2	14	16	10	1	12	11	3
5	8	4	13	9	15	6	7	1	3	12	11	10	14	16	2
2	16	10	14	3	11	1	12	4	5	13	8	15	9	7	6
10	14	16	2	1	12	11	3	8	4	5	13	7	6	9	15
6	7	15	9	5	8	4	13	10	2	14	16	11	3	12	1
4	13	8	5	6	7	15	9	11	1	3	12	16	2	14	10
1	12	11	3	2	16	10	14	15	6	9	7	8	5	13	4
15	9	7	6	4	13	8	5	16	10	2	14	12	1	3	11
11	3	12	1	10	14	16	2	7	15	6	9	13	4	5	8
16	2	14	10	11	3	12	1	13	8	4	5	9	15	6	7
8	5	13	4	15	9	7	6	12	11	1	3	14	10	2	16
12	1	3	11	16	2	14	10	9	7	15	6	5	8	4	13
13	4	5	8	7	6	9	15	3	12	11	1	2	16	10	14
7	6	9	15	8	5	13	4	14	16	10	2	3	11	1	12
14	10	2	16	12	1	3	11	5	13	8	4	6	7	15	9

Also solved with : 104 × Naked Single

SCORE **851**

Hidden Single 36 targets

Targets (36) (3,3) (11,3) (9,4) (15,6) (16,8) (10,5) (5,9) (4,16) (3,5) (4,9) (12,6) (6,8) (7,10) (1,6) (9,1) (9,8) (10,14) (12,5) (12,4) (5,10) (3,10) (6,10) (15,7) (8,8) (3,11) (4,4) (14,14) (1,3) (12,3) (7,13) (12,13) (11,10) (11,14) (1,4) (13,5) (16,5)

Naked Pair 3 targets

Targets (3) (9,15) (10,2) (14,4)

Hidden Pair 2 targets

Targets (2) (14,3) (15,3)

Naked Triple 3 targets

Targets (3) (2,1) (4,1) (6,1)

No. 10

Hard

14	3	6	1	12	9	10	16	8	15	5	13	11	2	7	4
9	16	10	12	3	1	14	6	2	11	7	4	5	13	8	15
11	2	4	7	8	5	15	13	3	14	1	6	9	16	12	10
15	8	13	5	7	11	4	2	12	10	9	16	14	3	1	6
13	5	8	15	11	4	2	7	9	16	10	12	6	1	14	3
10	12	16	9	1	14	6	3	7	4	11	2	15	8	5	13
6	1	3	14	9	10	16	12	5	13	15	8	4	7	11	2
4	7	2	11	5	15	13	8	1	6	14	3	10	12	9	16
8	15	5	13	4	2	7	11	10	12	16	9	3	14	6	1
3	14	1	6	10	16	12	9	15	8	13	5	2	11	4	7
16	9	12	10	14	6	3	1	11	2	4	7	13	5	15	8
2	11	7	4	15	13	8	5	14	3	6	1	16	9	10	12
12	10	9	16	6	3	1	14	4	7	2	11	8	15	13	5
7	4	11	2	13	8	5	15	6	1	3	14	12	10	16	9
1	6	14	3	16	12	9	10	13	5	8	15	7	4	2	11
5	13	15	8	2	7	11	4	16	9	12	10	1	6	3	14

Also solved with : 100 × Naked Single

SCORE **1046**

Hidden Single 31 targets

Targets (31) (6,9) (3,10) (13,10) (6,5) (7,14) (8,8) (8,7) (8,12) (11,1) (4,2) (4,11) (11,11) (7,7) (11,7) (10,7) (6,8) (9,10) (7,2) (7,3) (7,13) (13,16) (12,6) (9,6) (9,8) (13,12) (13,11) (13,13) (12,13) (9,11) (9,12) (6,12)

Naked Pair 4 targets

Targets (4) (11,2) (11,3) (11,12) (11,16)

Hidden Pair 4 targets

Targets (4) (2,14) (4,14) (3,6) (14,6)

Naked Triple 4 targets

Targets (4) (1,1) (1,4) (1,13) (1,16)

Hidden Triple 3 targets

Targets (3) (14,12) (15,9) (16,12)

No. 11

Expert

12	10	11	4	7	14	1	16	8	15	6	13	5	2	3	9
1	7	16	14	6	13	8	15	9	3	2	5	10	11	12	4
8	6	15	13	2	5	9	3	4	12	11	10	7	16	1	14
3	5	2	9	10	4	12	11	1	16	7	14	13	6	15	8
10	12	4	11	1	16	7	14	6	13	8	15	3	9	5	2
5	3	9	2	12	11	10	4	7	14	1	16	15	8	13	6
7	1	14	16	8	15	6	13	2	5	9	3	12	4	10	11
6	8	13	15	9	3	2	5	11	10	4	12	1	14	7	16
2	9	5	3	4	12	11	10	16	7	14	1	8	13	6	15
16	14	7	1	13	8	15	6	3	2	5	9	4	10	11	12
11	4	10	12	14	1	16	7	15	6	13	8	9	5	2	3
15	13	6	8	5	9	3	2	12	11	10	4	14	7	16	1
14	16	1	7	15	6	13	8	5	9	3	2	11	12	4	10
13	15	8	6	3	2	5	9	10	4	12	11	16	1	14	7
4	11	12	10	16	7	14	1	13	8	15	6	2	3	9	5
9	2	3	5	11	10	4	12	14	1	16	7	6	15	8	13

Also solved with : 103 × Naked Single

SCORE **847**

Hidden Single 44 targets

Targets (44) (13,13) (2,15) (5,15) (15,15) (14,16) (16,16) (12,16) (16,14) (7,16) (6,16) (7,6) (2,7) (4,8) (6,7) (5,7) (7,14) (11,10) (9,13) (3,7) (11,15) (3,15) (6,13) (11,14) (9,14) (10,14) (8,15) (3,12) (4,11) (14,5) (14,4) (13,4) (6,2) (15,2) (7,4) (16,10) (6,8) (12,8) (14,8) (2,12) (8,5) (15,5) (15,6) (12,11) (6,12)

Pointing Pairs 4 targets

Targets (4) (13,9) (14,9) (16,11) (16,12)

XY-Wing 1 occurrence · 1 target

Occurrence 1 · candidate 3 · pivot (6,11)
Pattern (3) (6,11) (7,12) (16,11)
Target (1) (7,11)

No. 12

Expert

2	4	3	6	7	16	9	13	11	14	8	12	5	15	1	10
7	9	13	16	3	2	6	4	1	5	15	10	11	14	12	8
14	12	11	8	5	15	10	1	7	16	9	13	2	6	3	4
5	10	1	15	11	14	8	12	3	2	6	4	7	16	13	9
8	11	14	12	15	10	1	5	16	9	13	7	6	4	2	3
15	1	5	10	14	8	12	11	2	6	4	3	16	9	7	13
16	13	7	9	2	6	4	3	5	15	10	1	14	8	11	12
6	3	2	4	16	9	13	7	14	8	12	11	15	10	5	1
4	2	6	3	9	13	7	16	8	12	11	14	10	1	15	5
10	5	15	1	8	12	11	14	6	4	3	2	9	13	16	7
12	14	8	11	10	1	5	15	9	13	7	16	4	3	6	2
9	7	16	13	6	4	3	2	15	10	1	5	8	12	14	11
11	8	12	14	1	5	15	10	13	7	16	9	3	2	4	6
3	6	4	2	13	7	16	9	12	11	14	8	1	5	10	15
1	15	10	5	12	11	14	8	4	3	2	6	13	7	9	16
13	16	9	7	4	3	2	6	10	1	5	15	12	11	8	14

Also solved with : 104 × Naked Single

SCORE **970**

Hidden Single 41 targets

Targets (41) (2,2) (7,3) (16,1) (4,3) (3,5) (10,5) (11,5) (12,6) (4,7) (4,8) (14,3) (16,8) (11,10) (9,4) (1,14) (2,10) (2,5) (5,5) (5,13) (1,15) (1,16) (9,11) (11,12) (3,8) (12,4) (7,6) (13,6) (11,8) (15,9) (13,8) (8,4) (12,8) (8,14) (6,16) (14,16) (11,16) (14,14) (6,13) (8,13) (11,13) (4,13)

Pointing Pairs 1 target

Targets (1) (6,15)

Box-Line Reduction 2 targets

Targets (2) (11,14) (11,15)

Hidden Pair 1 target

Targets (1) (7,15)

XY-Wing 1 occurrence · 1 target

Occurrence 1 · candidate 6 · pivot (7,14)
Pattern (3) (7,14) (2,14) (8,15)
Target (1) (2,15)

No. 13

Expert

13	2	9	12	15	6	10	1	16	4	5	8	11	14	3	7
11	14	7	3	9	2	13	12	1	10	6	15	8	4	5	16
10	6	15	1	8	5	4	16	7	14	3	11	13	2	12	9
8	4	16	5	7	14	11	3	12	13	2	9	15	10	6	1
16	8	5	4	3	11	7	14	2	9	13	12	1	15	10	6
9	13	12	2	1	10	15	6	5	8	4	16	7	11	14	3
7	11	3	14	12	13	9	2	6	15	10	1	16	8	4	5
15	10	1	6	16	4	8	5	3	11	14	7	9	13	2	12
14	3	11	7	13	12	2	9	15	6	1	10	4	5	16	8
6	1	10	15	4	16	5	8	11	3	7	14	2	12	9	13
2	12	13	9	10	1	6	15	8	5	16	4	14	3	7	11
4	5	8	16	11	3	14	7	9	2	12	13	10	6	1	15
5	16	4	8	14	7	3	11	13	12	9	2	6	1	15	10
1	15	6	10	5	8	16	4	14	7	11	3	12	9	13	2
12	9	2	13	6	15	1	10	4	16	8	5	3	7	11	14
3	7	14	11	2	9	12	13	10	1	15	6	5	16	8	4

SCORE **1283**

Hidden Single 61 targets

Targets (61) (11,6) (1,7) (13,6) (16,7) (12,7) (13,5) (3,3) (5,7) (7,7) (12,4) (7,4) (6,8) (2,9) (6,13) (11,14) (5,15) (3,2) (4,11) (10,1) (2,4) (3,13) (14,4) (5,10) (4,14) (2,8) (5,11) (3,10) (9,16) (7,1) (5,1) (10,2) (11,16) (3,5) (3,6) (9,9) (9,13) (10,11) (11,5) (12,10) (9,10) (12,3) (1,5) (7,6) (2,5) (8,6) (16,12) (14,1) (2,2) (4,7) (14,3) (15,3) (14,10) (15,10) (14,12) (7,9) (8,12) (8,5) (8,10) (5,12) (7,12) (5,13)

Box-Line Reduction 1 target

Targets (1) (6,3)

Naked Pair 2 targets

Targets (2) (8,16) (2,1)

Naked Quadruple 1 target

Targets (1) (7,2)

X-Wing 1 occurrence · 1 target

Occurrence 1 · candidate 13 · rows 2,15
Pattern (4) (4,2) (7,2) (4,15) (7,15)
Target (1) (4,6)

Also solved with : 80 × Naked Single

No. 14

Expert

15	11	6	14	2	9	8	7	1	13	5	4	10	3	12	16
9	7	2	8	13	4	1	5	3	10	16	12	11	6	14	15
5	13	1	4	3	16	12	10	14	6	11	15	2	8	9	7
16	10	3	12	6	15	14	11	8	2	7	9	13	1	4	5
1	4	5	13	16	3	10	12	11	15	14	6	9	7	2	8
6	14	15	11	9	2	7	8	5	4	1	13	12	16	10	3
2	8	9	7	4	13	5	1	16	12	3	10	14	15	11	6
3	12	16	10	15	6	11	14	7	9	8	2	4	5	13	1
4	5	13	1	10	12	3	16	6	11	15	14	7	2	8	9
14	15	11	6	7	8	2	9	13	5	4	1	16	10	3	12
8	9	7	2	5	1	13	4	10	16	12	3	15	11	6	14
12	16	10	3	11	14	6	15	2	7	9	8	5	13	1	4
10	3	12	16	14	11	15	6	9	8	2	7	1	4	5	13
13	1	4	5	12	10	16	3	15	14	6	11	8	9	7	2
11	6	14	15	8	7	9	2	4	1	13	5	3	12	16	10
7	2	8	9	1	5	4	13	12	3	10	16	6	14	15	11

SCORE **1296**

Hidden Single 35 targets

Targets (35) (10,8) (1,12) (3,15) (5,13) (2,15) (3,13) (5,9) (3,6) (10,6) (6,10) (11,15) (3,11) (1,16) (4,12) (4,13) (10,16) (8,14) (9,4) (13,14) (15,9) (10,13) (9,7) (10,2) (1,3) (16,5) (5,8) (1,9) (14,11) (1,2) (1,10) (15,8) (13,2) (5,2) (13,4) (14,4)

Pointing Pairs 28 targets

Targets (28) (16,2) (16,4) (16,16) (8,1) (8,4) (7,1) (7,2) (7,3) (7,7) (7,8) (12,1) (12,2) (12,3) (8,16) (11,9) (11,11) (7,13) (11,1) (11,4) (11,13) (4,1) (4,2) (15,3) (15,4) (9,11) (12,11) (12,5) (12,7)

Box-Line Reduction 9 targets

Targets (9) (14,1) (14,2) (15,1) (15,2) (9,10) (9,12) (12,10) (9,13) (12,16)

XY-Wing 1 occurrence · 1 target

Occurrence 1 · candidate 12 · pivot (15,5)
Pattern (3) (15,5) (13,6) (15,15)
Target (1) (13,15)

Also solved with : 81 × Naked Single

No. 15

Expert

13	15	9	14	7	2	12	6	5	11	4	1	3	8	10	16
10	16	3	8	14	13	15	9	7	2	12	6	5	4	1	11
6	2	7	12	4	1	11	5	8	10	16	3	14	15	9	13
1	11	5	4	8	10	16	3	14	13	15	9	7	12	6	2
11	4	1	5	3	16	8	10	9	15	14	13	6	7	2	12
15	14	13	9	6	12	7	2	1	4	5	11	10	3	16	8
2	12	6	7	5	11	4	1	3	16	8	10	9	14	13	15
16	8	10	3	9	15	14	13	6	12	7	2	1	5	11	4
8	3	16	10	13	14	9	15	2	7	6	12	11	1	4	5
12	7	2	6	1	4	5	11	10	8	3	16	13	9	15	14
14	9	15	13	2	7	6	12	11	5	1	4	16	10	8	3
4	5	11	1	10	8	3	16	13	14	9	15	2	6	12	7
9	13	14	15	12	6	2	7	4	1	11	5	8	16	3	10
7	6	12	2	11	5	1	4	16	3	10	8	15	13	14	9
3	10	8	16	15	9	13	14	12	6	2	7	4	11	5	1
5	1	4	11	16	3	10	8	15	9	13	14	12	2	7	6

SCORE **1622**

Hidden Single 26 targets
Targets (26) (14,3) (2,5) (7,8) (1,15) (2,11) (4,3) (6,15) (16,14) (7,10) (4,11) (4,14) (1,14) (3,3) (3,8) (3,10) (15,2) (9,6) (4,6) (13,8) (11,15) (15,7) (14,14) (14,13) (16,13) (11,7) (15,15)

Pointing Pairs 14 targets
Targets (14) (11,11) (12,11) (14,11) (14,12) (9,1) (11,1) (8,2) (8,4) (15,14) (5,13) (6,13) (13,1) (13,9) (13,12)

Box-Line Reduction 10 targets
Targets (10) (14,4) (16,4) (5,9) (5,12) (8,9) (8,11) (8,12) (7,14) (8,14) (3,13)

Naked Pair 13 targets
Targets (13) (5,10) (8,10) (9,10) (11,10) (12,10) (5,16) (8,16) (11,16) (10,4) (10,5) (10,11) (10,12) (10,15)

Hidden Pair 4 targets
Targets (4) (11,2) (12,4) (9,5) (9,12)

Swordfish 1 occurrence · 5 targets
Occurrence 1 · candidate 3 · rows 4,6,11
Pattern (9) (8,4) (14,4) (16,4) (8,6) (14,6) (16,6) (8,11) (14,11) (16,11)
Targets (5) (8,1) (8,5) (14,1) (14,8) (16,5)

Also solved with : 75 × Naked Single

No. 16

Extreme

9	13	7	16	15	10	12	14	1	5	6	3	4	11	8	2
14	12	10	15	7	9	16	13	11	2	8	4	1	6	5	3
1	6	3	5	2	4	8	11	14	15	12	10	9	13	16	7
4	11	2	8	5	3	6	1	9	16	13	7	10	14	12	15
7	9	16	13	12	15	14	10	3	6	1	5	2	4	11	8
10	14	15	12	16	7	13	9	4	8	11	2	3	1	6	5
2	4	8	11	6	5	1	3	7	13	9	16	15	10	14	12
3	1	5	6	8	2	11	4	10	12	14	15	7	9	13	16
8	2	11	4	1	6	3	5	16	9	7	13	12	15	10	14
5	3	6	1	11	8	4	2	15	14	10	12	16	7	9	13
16	7	13	9	14	12	10	15	5	1	3	6	8	2	4	11
15	10	12	14	13	16	9	7	2	11	4	8	5	3	1	6
11	8	4	2	3	1	5	6	13	7	16	9	14	12	15	10
6	5	1	3	4	11	2	8	12	10	15	14	13	16	7	9
12	15	14	10	9	13	7	16	8	4	2	11	6	5	3	1
13	16	9	7	10	14	15	12	6	3	5	1	11	8	2	4

SCORE **1890**

Hidden Single 38 targets
Targets (38) (2,7) (11,9) (3,9) (2,16) (8,16) (9,16) (8,13) (6,14) (11,4) (1,9) (7,9) (5,9) (14,16) (9,13) (9,4) (13,3) (1,3) (2,5) (7,14) (13,5) (6,8) (3,14) (6,13) (11,5) (4,8) (9,1) (9,12) (9,9) (3,12) (10,7) (2,4) (14,4) (7,4) (7,3) (15,4) (5,14) (15,14) (11,11)

Pointing Pairs 7 targets
Targets (7) (10,10) (11,10) (12,11) (12,12) (12,15) (15,8) (3,11)

Box-Line Reduction 3 targets
Targets (3) (10,6) (11,6) (12,8)

Naked Pair 1 target
Targets (1) (1,5)

Naked Triple 2 targets
Targets (2) (10,1) (10,2)

XY-Wing 1 occurrence · 1 target
Occurrence 1 · candidate 4 · pivot (5,11)
Pattern (3) (5,11) (7,10) (15,11)
Target (1) (16,10)

Skyscraper 1 occurrence · 2 targets
Occurrence 1 · candidate 15 · columns 10,15
Pattern (4) (10,3) (15,3) (10,14) (15,13)
Targets (2) (12,13) (16,14)

Also solved with : 91 × Naked Single

No. 17

Extreme

1	16	11	8	14	6	12	7	15	2	5	9	4	3	10	13
9	5	2	15	16	1	11	8	10	3	4	13	6	14	12	7
6	14	12	7	3	4	10	13	8	11	16	1	5	2	15	9
4	3	10	13	2	5	15	9	7	12	14	6	16	11	8	1
12	7	6	14	13	10	4	3	16	1	8	11	15	9	5	2
10	13	4	3	9	15	5	2	14	6	7	12	8	1	16	11
11	8	1	16	7	12	6	14	5	9	15	2	10	13	4	3
2	15	9	5	8	11	1	16	4	13	10	3	12	7	6	14
5	2	15	9	11	16	8	1	13	10	3	4	14	12	7	6
3	10	13	4	15	2	9	5	6	7	12	14	11	8	1	16
16	11	8	1	12	14	7	6	9	15	2	5	3	10	13	4
14	12	7	6	10	3	13	4	1	8	11	16	2	15	9	5
15	9	5	2	1	8	16	11	3	4	13	10	7	6	14	12
8	1	16	11	6	7	14	12	2	5	9	15	13	4	3	10
13	4	3	10	5	9	2	15	12	14	6	7	1	16	11	8
7	6	14	12	4	13	3	10	11	16	1	8	9	5	2	15

Also solved with : 55 × Naked Single

SCORE **2134**

Hidden Single 53 targets
Targets (53) (15,2) (11,8) (6,8) (7,2) (10,16) (4,6) (8,5) (2,4) (2,3) (4,2) (15,1) (14,1) (3,4) (7,6) (12,7) (3,2) (13,2) (11,16) (7,16) (11,9) (12,3) (10,3) (10,7) (2,14) (8,9) (8,16) (4,7) (16,10) (16,13) (12,13) (16,14) (13,9) (9,3) (6,9) (14,13) (6,13) (1,14) (16,15) (13,12) (7,12) (9,9) (3,6) (3,11) (14,5) (13,16) (6,15) (1,15) (6,16) (5,1) (2,8) (1,8) (11,10) (7,14)

Pointing Pairs 23 targets
Targets (23) (13,4) (11,12) (15,10) (15,11) (1,5) (2,5) (3,5) (5,13) (5,14) (5,16) (2,7) (8,1) (8,14) (8,15) (15,6) (5,4) (6,4) (2,15) (2,16) (14,9) (14,12) (9,14) (2,11)

Box-Line Reduction 5 targets
Targets (5) (5,5) (6,7) (11,15) (12,14) (12,15)

Naked Pair 12 targets
Targets (12) (4,8) (15,8) (15,7) (10,4) (10,14) (12,10) (12,11) (12,1) (15,4) (15,13) (15,14) (15,15)

X-Wing 1 occurrence · 1 target
Occurrence 1 · candidate 6 · rows 10,14
Pattern (4) (5,10) (9,10) (5,14) (9,14)
Target (1) (9,11)

No. 18

Extreme

16	12	8	11	5	13	1	15	9	4	7	6	3	14	10	2
5	1	15	13	8	12	16	11	10	14	2	3	9	7	4	6
9	6	4	7	10	2	3	14	5	15	13	1	16	11	8	12
10	3	14	2	4	6	9	7	8	11	12	16	5	13	15	1
11	8	12	16	13	5	15	1	7	6	9	4	14	3	2	10
2	14	3	10	6	4	7	9	12	16	8	11	13	5	1	15
13	15	1	5	12	8	11	16	2	3	10	14	7	9	6	4
7	4	6	9	2	10	14	3	13	1	5	15	11	16	12	8
14	10	2	3	7	9	4	6	11	12	16	8	15	1	13	5
8	16	11	12	15	1	5	13	4	7	6	9	10	2	14	3
4	9	7	6	14	3	10	2	15	13	1	5	8	12	11	16
15	5	13	1	11	16	8	12	14	2	3	10	4	6	7	9
12	11	16	8	1	15	13	5	6	9	4	7	2	10	3	14
1	13	5	15	16	11	12	8	3	10	14	2	6	4	9	7
6	7	9	4	3	14	2	10	1	5	15	13	12	8	16	11
3	2	10	14	9	7	6	4	16	8	11	12	1	15	5	13

SCORE **2406**

Hidden Single 36 targets
Targets (36) (7,8) (6,8) (16,5) (9,5) (3,11) (10,10) (2,10) (2,12) (5,7) (1,14) (6,7) (6,5) (4,7) (8,7) (14,7) (13,7) (8,4) (15,7) (8,15) (8,2) (8,1) (9,14) (6,16) (15,1) (1,4) (3,9) (3,6) (2,6) (15,6) (16,11) (13,3) (12,4) (10,4) (9,7) (9,8) (3,4)

Pointing Pairs 15 targets
Targets (15) (11,5) (11,8) (11,10) (8,10) (1,10) (1,12) (4,2) (4,3) (10,9) (13,9) (13,13) (13,14) (13,15) (13,12) (3,1)

Box-Line Reduction 7 targets
Targets (7) (2,13) (2,16) (13,4) (14,2) (16,2) (9,10) (9,11)

Naked Pair 6 targets
Targets (6) (12,5) (1,3) (1,13) (14,1) (14,14) (14,15)

Hidden Pair 6 targets
Targets (6) (6,13) (6,14) (1,6) (1,7) (11,13) (11,14)

Naked Triple 1 target
Targets (1) (11,6)

Naked Quadruple 2 targets
Targets (2) (2,2) (7,2)

XY-Wing 1 occurrence · 1 target
Occurrence 1 · candidate 12 · pivot (2,8)
Pattern (3) (2,8) (2,13) (3,5)
Target (1) (3,15)

2-String Kite 1 occurrence · 2 targets
Occurrence 1 · candidate 1 · row 1, column 2
Pattern (3) (2,1) (7,1) (2,2)

Also solved with : 70 × Naked Single

No. 19

Extreme

9	14	15	2	4	3	11	16	6	5	13	12	1	7	8	10
5	6	12	13	15	9	2	14	10	7	8	1	16	11	4	3
7	10	1	8	12	5	13	6	3	11	4	16	14	2	15	9
11	3	16	4	1	7	8	10	9	2	15	14	6	13	12	5
2	9	14	15	16	11	4	3	5	13	12	6	10	8	1	7
4	11	3	16	10	8	1	7	2	15	14	9	5	12	6	13
8	7	10	1	6	13	12	5	11	4	16	3	9	15	14	2
13	5	6	12	14	2	15	9	7	8	1	10	3	4	16	11
1	8	7	10	5	12	6	13	4	16	3	11	2	14	9	15
12	13	5	6	9	15	14	2	8	1	10	7	11	16	3	4
16	4	11	3	7	1	10	8	15	14	9	2	13	6	5	12
15	2	9	14	3	4	16	11	13	12	6	5	7	1	10	8
3	16	4	11	8	10	7	1	14	9	2	15	12	5	13	6
6	12	13	5	2	14	9	15	1	10	7	8	4	3	11	16
14	15	2	9	11	16	3	4	12	6	5	13	8	10	7	1
10	1	8	7	13	6	5	12	16	3	11	4	15	9	2	14

SCORE **2752**

Hidden Single 31 targets
Targets (31) (4,3) (8,3) (9,7) (5,8) (5,13) (8,11) (16,12) (12,14) (5,15) (16,15) (4,10) (12,4) (12,15) (15,9) (12,1) (12,9) (13,10) (3,11) (16,2) (10,15) (11,12) (5,12) (4,6) (15,7) (3,12) (4,7) (1,11) (11,11) (15,1) (10,16) (6,2)

Pointing Pairs 20 targets
Targets (20) (4,9) (4,11) (10,13) (11,13) (5,7) (6,7) (7,7) (8,7) (13,4) (3,1) (8,1) (8,9) (8,10) (7,10) (7,11) (6,8) (8,8) (2,7) (1,1) (11,4)

Box-Line Reduction 3 targets
Targets (3) (13,13) (13,16) (16,13)

Naked Pair 1 target
Targets (1) (3,9)

Hidden Pair 4 targets
Targets (4) (10,6) (11,7) (10,10) (10,11)

Hidden Triple 1 target
Targets (1) (4,4)

XY-Wing 1 occurrence · 2 targets
Occurrence 1 · candidate 15 · pivot (14,15)
Pattern (3) (14,15) (14,7) (16,14)
Targets (2) (14,14) (16,7)

XYZ-Wing 1 occurrence · 1 target
Occurrence 1 · candidate 13 · pivot (4,2)
Pattern (3) (4,2) (2,3) (15,2)
Target (1) (1,2)

Skyscraper 1 occurrence · 2 targets
Occurrence 1 · candidate 5 · rows 3,12
Pattern (4) (6,3) (6,12) (10,3) (12,12)
Targets (2) (10,9) (12,2)

2-String Kite 1 occurrence · 3 targets
Occurrence 1 · candidate 1 · row 5, column 7
Pattern (3) (7,5) (15,5) (7,6)

Also solved with : 74 × Naked Single

No. 20

Extreme

15	5	10	13	9	2	16	14	3	12	4	8	11	7	1	6
14	2	9	16	3	4	8	12	1	11	6	7	13	10	5	15
11	6	1	7	5	15	10	13	2	16	14	9	8	3	4	12
12	4	3	8	1	6	7	11	5	13	15	10	16	9	2	14
5	10	13	15	16	9	14	2	8	4	3	12	6	11	7	1
4	3	8	12	7	1	11	6	10	15	5	13	14	16	9	2
2	9	16	14	8	3	12	4	7	6	1	11	15	13	10	5
6	1	7	11	10	5	13	15	9	14	2	16	12	8	3	4
8	12	4	3	6	11	1	7	15	10	13	5	9	2	14	16
16	14	2	9	4	12	3	8	6	7	11	1	10	5	15	13
13	15	5	10	2	14	9	16	4	8	12	3	7	1	6	11
7	11	6	1	15	13	5	10	14	9	16	2	3	4	12	8
10	13	15	5	14	16	2	9	12	3	8	4	1	6	11	7
1	7	11	6	13	10	15	5	16	2	9	14	4	12	8	3
3	8	12	4	11	7	6	1	13	5	10	15	2	14	16	9
9	16	14	2	12	8	4	3	11	1	7	6	5	15	13	10

SCORE **3206**

Hidden Single 37 targets
Targets (37) (1,9) (8,16) (2,7) (5,7) (8,7) (1,6) (13,7) (1,16) (7,14) (3,13) (4,5) (3,1) (2,11) (11,13) (2,10) (12,10) (9,2) (4,12) (6,6) (9,6) (2,8) (3,4) (15,10) (15,2) (16,13) (15,5) (15,6) (15,8) (16,4) (4,16) (2,2) (6,2) (5,10) (6,10) (8,2) (6,3) (10,8)

Pointing Pairs 11 targets
Targets (11) (11,3) (12,3) (1,3) (1,4) (10,10) (11,10) (9,4) (9,9) (11,15) (12,14) (12,16)

Box-Line Reduction 9 targets
Targets (9) (13,5) (13,8) (14,14) (14,15) (16,16) (13,14) (13,15) (13,13) (14,13)

Naked Pair 1 target
Targets (1) (11,12)

Naked Quadruple 5 targets
Targets (5) (9,1) (9,12) (9,16) (5,1) (12,1)

Hidden Quadruple 2 targets
Targets (2) (12,9) (12,2)

XYZ-Wing 1 occurrence · 1 target
Occurrence 1 · candidate 7 · pivot (10,10)
Pattern (3) (10,10) (10,2) (12,9)
Target (1) (10,9)

Skyscraper 2 occurrences · 3 targets
Occurrence 1 · candidate 6 · columns 7,16
Pattern (4) (7,1) (16,1) (7,15) (16,16)
Target (1) (5,16)

Occurrence 2 · candidate 9 · columns 7,10
Pattern (4) (7,1) (10,1) (7,11) (10,12)
Targets (2) (6,12) (12,11)

2-String Kite 1 occurrence · 2 targets
Occurrence 1 · candidate 1 · row 13, column 8
Pattern (3) (8,13) (13,13) (8,15)

Also solved with : 74 × Naked Single

Index

Grids grouped by solving technique

Hidden Single

15 grids
scores: 418 – 3206

A digit can go in only one cell within a row, column, or box, even if that cell still shows other candidates.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
6	Hard	418	**7**	Hard	743	**8**	Hard	849	**9**	Hard	851
10	Hard	1046	**11**	Expert	847	**12**	Expert	970	**13**	Expert	1283
14	Expert	1296	**15**	Expert	1622	**16**	Extreme	1890	**17**	Extreme	2134
18	Extreme	2406	**19**	Extreme	2752	**20**	Extreme	3206			

Naked Triple

7 grids
scores: 418 – 2406

Three cells in a unit contain only three candidates in total. Those candidates can be removed from every other cell in the unit.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
6	Hard	418	**7**	Hard	743	**8**	Hard	849	**9**	Hard	851
10	Hard	1046	**16**	Extreme	1890	**18**	Extreme	2406			

Naked Pair

11 grids
scores: 743 – 3206

Two cells in the same unit contain exactly the same two candidates. Those values are locked there and can be removed from the other cells in the unit.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
7	Hard	743	**8**	Hard	849	**9**	Hard	851	**10**	Hard	1046
13	Expert	1283	**15**	Expert	1622	**16**	Extreme	1890	**17**	Extreme	2134
18	Extreme	2406	**19**	Extreme	2752	**20**	Extreme	3206			

Pointing Pairs

9 grids
scores: 847 – 3206

Inside a box, a candidate appears only along one row or column. It can be removed from every other cell in that row or column outside the box.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
11	Expert	847	**12**	Expert	970	**14**	Expert	1296	**15**	Expert	1622
16	Extreme	1890	**17**	Extreme	2134	**18**	Extreme	2406	**19**	Extreme	2752
20	Extreme	3206									

XY-Wing

6 grids
scores: 847 – 2752

Three linked cells form a pivot and two pincers. A candidate shared by both pincers can be eliminated from any cell that sees them both.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
11	Expert	847	**12**	Expert	970	**14**	Expert	1296	**16**	Extreme	1890
18	Extreme	2406	**19**	Extreme	2752						

Hidden Pair

6 grids
scores: 851 – 2752

Two digits can appear only in the same two cells of a unit. All other candidates can be removed from those two cells.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
9	Hard	851	**10**	Hard	1046	**12**	Expert	970	**15**	Expert	1622
18	Extreme	2406	**19**	Extreme	2752						

Box-Line Reduction

9 grids
scores: 970 – 3206

In a row or column, a candidate appears only in cells belonging to one box. It can be removed from the other cells in that box, outside the row or column.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
12	Expert	970	**13**	Expert	1283	**14**	Expert	1296	**15**	Expert	1622
16	Extreme	1890	**17**	Extreme	2134	**18**	Extreme	2406	**19**	Extreme	2752
20	Extreme	3206									

Hidden Triple

2 grids
scores: 1046 – 2752

Three digits appear only in the same three cells of a unit. The other candidates in those cells can be eliminated.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
10	Hard	1046	**19**	Extreme	2752						

Naked Quadruple

3 grids
scores: 1283 – 3206

Four cells in a unit contain only four candidates in total. Those four values are locked there and can be removed from the rest of the unit.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
13	Expert	1283	**18**	Extreme	2406	**20**	Extreme	3206			

X-Wing

2 grids
scores: 1283 – 2134

A digit appears in only two cells across two aligned rows or columns. It can be eliminated from every other cell in the matching columns or rows.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
13	Expert	1283	**17**	Extreme	2134						

Swordfish

1 grid
scores: 1622

An extension of X-Wing across three rows and three columns. A digit confined to those columns on those rows can be eliminated elsewhere in the same columns.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
15	Expert	1622									

Skyscraper

3 grids
scores: 1890 – 3206

Two rows contain a candidate in exactly two cells while sharing one column. The digit can be eliminated from cells that see both non-shared endpoints.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
16	Extreme	1890	**19**	Extreme	2752	**20**	Extreme	3206			

2-String Kite

3 grids
scores: 2406 – 3206

A digit forms two short chains, one in a row and one in a column, meeting in the same box. The digit can be eliminated from the cell that sees both free endpoints.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
18	Extreme	2406	**19**	Extreme	2752	**20**	Extreme	3206			

XYZ-Wing

2 grids
scores: 2752 – 3206

An extension of XY-Wing with three candidates in the pivot. It removes the shared candidate from cells that see all three cells.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
19	Extreme	2752	**20**	Extreme	3206						

Hidden Quadruple

1 grid
scores: 3206

Four digits appear only in the same four cells of a unit. All other candidates can be removed from those four cells.

NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE	NO.	LEVEL	SCORE
20	Extreme	3206									

Understanding the difficulty levels

These difficulty levels describe the classification method used in my Giant Sudoku books.

Level	Principle	Marker
Easy	Basic techniques only	Score < 160
Hard	Sets and intermediate logic	Score >= 160
Expert	At least one advanced technique	Score >= 800
Extreme	Several advanced techniques	Score > 1200

This page presents the four editorial levels used across the collection. Even if one level does not appear in this volume, it may appear in other books.

EASY
Easy puzzles can be solved using only Naked Single and Hidden Single, the two core Sudoku techniques. No sets, no advanced patterns. The goal is to get comfortable with the 16×16 format before moving on.

HARD
Hard puzzles require mastery of set techniques: Naked Pair, Hidden Pair, Naked Triple, and Hidden Triple. These methods identify groups of candidates that exclude one another, allowing eliminations in neighboring rows, columns, and boxes.

Every Hard puzzle requires at least two of these intermediate techniques and reaches an internal score of at least 160. No advanced technique is required.

EXPERT
Expert puzzles cannot be solved without at least one advanced technique. These techniques — X-Wing, XY-Wing, Swordfish, Skyscraper, 2-String Kite — eliminate candidates through patterns that span several rows or columns at once.

Every Expert puzzle also requires at least two intermediate techniques and reaches an internal score of at least 800.

EXTREME
Extreme puzzles combine several advanced techniques — at least two — including some of the most complex ones. The internal score exceeds 1200.

These are the rarest and most demanding grids. Every removed cell has been selected carefully to guarantee genuine complexity, never artificial difficulty.

The score

The score shown on each solution page is a cumulative complexity indicator, computed in two parts.

The first part is a base score accumulated throughout the puzzle: each intermediate technique used in the grid contributes to the total, weighted by how rare it is.

The tables below detail the points awarded for each application:

BASIC AND INTERMEDIATE TECHNIQUES

Technique	Bonus
Naked Single	**+0**
Hidden Single	**+10**
Pointing Pairs	**+30**
Box-Line Reduction	**+35**
Naked Pair	**+60**
Naked Triple	**+120**
Hidden Pair	**+150**
Naked Quadruple	**+180**
Hidden Triple	**+220**
Hidden Quadruple	**+290**

ADVANCED TECHNIQUES

Technique	Bonus
X-Wing	**+250**
XY-Wing	**+300**
Skyscraper	**+325**
2-String Kite	**+325**
Swordfish	**+350**
XYZ-Wing	**+360**
Empty Rectangle	**+425**
Jellyfish	**+450**
Unique Rectangle	**+475**
W-Wing	**+500**
Finned X-Wing	**+550**

The second part is an Extreme promotion bonus, awarded once per grid if at least one extreme technique was used:

Technique	Bonus
Jellyfish, Finned X-Wing, W-Wing, Empty Rectangle, Unique Rectangle	**+425**
XYZ-Wing, 2-String Kite, Skyscraper	**+300**
XY-Wing, Swordfish	**+225**
X-Wing	**+150**
Any other advanced technique	**+100**

In 16×16, an additional adjustment rewards puzzles rich in pairs and larger sets (triples, quadruples), and penalizes those where Naked Single accounts for too much of the solving path — a sign of a grid with thinner logical density.

The score is not an absolute difficulty rating: it is a relative measure of a puzzle's logical richness within its level. Two grids of the same level can have very different scores: one may use a single rare technique, while another chains several rarer ideas in a more accessible flow.

These details do not guarantee that every grid in this collection uses all the methods listed.

Just released a free 16×16 Sudoku book — 20 grids from Medium to Extreme, with detailed hints in the solutions: exact technique and cell coordinates, not just the answer.
More collections coming soon — feel free to follow me!

https://www.amazon.com/stores/Nicolas-Lion/author/B0H1RJYMWK

This volume was designed and produced by

Nicolas Lion

Programmer

nlion.fr

Also author of PlayAwale — online strategy game

playawale.com

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